1990

Proposition 128: Environment Protection Act of 1990

Senate Committee on Toxics and Public Safety Management

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ENVIRONMENTAL PROTECTION ACT OF 1990

Senator Art Torres, Chairman
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NOVEMBER 1990 BALLOT

PROPOSITION 128: Environmental Protection Act of 1990. Bond and Initiative Statute.

Senate Office of Research ❑ 1100 J Street, Suite 650 ❑ Sacramento, CA 95814 ❑ 916-445-1727

EXECUTIVE SUMMARY: ANALYSIS OF KEY PROVISIONS

This report includes a comprehensive discussion of each area addressed by Proposition 128. Here is an overview of its key provisions followed by lists of sponsors, supporters and opponents.

Food Safety, Pesticides and Agricultural Worker Safety

Proposition 128, the California Environmental Protection Act on the November 1990 ballot, phases out food-use pesticides known to cause cancer or reproductive damage. A portion of $40 million that the initiative appropriates for research is dedicated to identifying alternative pest management practices for pesticides banned or canceled as a result of the initiative. The initiative also transfers authority to establish and regulate health standards for pesticides from the California Department of Food and Agriculture to the state's Department of Health Services.

It is exceedingly difficult to accurately estimate the economic consequences of the initiative. While the expense of administering pesticide regulations may increase slightly, the initiative offers the potential for a more efficient regulatory program. The initiative would gradually prohibit the use of various pesticides in California, but other state and federal laws are likely to eventually limit many of these same pesticides. The price of a particular food may increase marginally, but it is unlikely that foodstuffs would dramatically increase in price. And while the initiative is unlikely to dramatically change the overall state of public health, it is probable the measure if passed, will markedly reduce the risk of dietary cancer for infants and children as well as further reduce the occupational hazards confronting fieldworkers.

Greenhouse Gas Reduction Plan

The initiative requires the state Energy Commission to adopt a plan to reduce all greenhouse gases from 1988 levels. The act requires that carbon dioxide (CO_2) emissions be reduced statewide by 20 percent by 2000, and by 40 percent by 2010. Reducing CO_2, which accounts for about half of the increasing greenhouse effect, can only be achieved by reducing use of fossil fuels. With .6 percent of the world's population, California produces 1.5 percent of the world's CO_2. California would incur major costs to reduce its CO_2 production by 20 percent and 40 percent. By itself, California cannot significantly reduce the growing greenhouse effect. As a leader in innovative energy production and conservation technologies, however, California could encourage and help the United States and other nations to reduce their CO_2 emissions.

Commercial and Residential Tree Planting

The act requires the state Resources Agency to require any person constructing a project to plant one tree for each 500 square feet of the project. Proponents argue this section will cause 1 million more trees to be planted in California each year. This will help absorb CO_2, cool urban living areas, and beautify landscapes. Scientists at the Lawrence Berkeley Laboratory at the University of California estimate that planting 1 million trees would absorb enough CO_2 to offset the CO_2 produced each year by 27,000 cars, and reduce electricity demand for air conditioners by about $40,000 per year. Planting one tree costs about $25. A developer of a typical super-regional shopping center, for example, would pay about $200,000 to plant about 8,000 trees.

Ancient Redwood Forest Preservation and Urban Forestry Program

The act would authorize the state treasurer to sell $300 million in general obligation bonds for acquiring stands of ancient redwoods ($200 million), and for urban forestry projects ($100 million). The act prohibits owners from harvesting any ancient redwood between November 7, 1990, and November 7, 1991. It prohibits clear-cutting of ancient redwood stands after November 7, 1991. About 61 percent of ancient redwood stands are privately owned. The logging moratorium and clear-cutting prohibition could cause some logging operations to shut down and others to incur higher logging costs. Although proponents and opponents argue about the environmental effects of clear-cutting, it appears that clear-cutting damages the environment more than selective logging.

Stratospheric Ozone Layer Protection

The initiative establishes a schedule for the prohibition, and/or recycling of specified ozone-depleting chemicals and of certain products containing, manufactured with or using these substances.

Some of these changes, such as recycling, would be easy to make and they would save money. Some electronic companies are already recycling chlorofluorocarbon (CFC) solvents. Some CFC substitutes, like HCFC-22, which have a much lower ozone-depleting potential, are already available and in some instances widely used. Transition to other substitutes, however, would be more difficult and costlier because equipment would need to be redesigned, workers retrained and chemical plants refitted.

Because of the severity of the environmental damage caused by ozone depletion, there is an urgent need to reduce the emissions of ozone-depleting substances. Some scientists have said that every year of delay in reducing substances harmful to the ozone layer will require up to 5 to 10 years in

additional recovery time. The initiative would set the phase-out date of high ozone-depleting chemicals by 1997. At least 13 nations believe a phase-out by 1997 is critical because of the rapidity with which the ozone layer is being destroyed.

Recycled Paper Products

Proposition 128 increases the requirements for purchases of recycled paper products by the Department of General Services and other state and local agencies. These requirements would probably result in significant annual costs to all state and local agencies. The costs, however, would be partially offset by the savings from the avoidance of waste disposal and the revenues from selling recyclable paper.

In addition, and perhaps most importantly, an increase in government purchases of recycled paper products could create a significant market demand, since state and local government represent a large market for paper products. This in turn, could provide a better balance between supply, which would be greatly increased because of a new statewide program for recycling, and demand.

Coastal Protection, Including Oil Spill Response

The initiative contains significant provisions designed to improve the protection of all state bay, estuarine and ocean waters. The initiative would provide a comprehensive program for preventing and responding to oil spills, ban offshore oil development in state waters, and prohibit the discharge from sewer treatment plants that don't provide secondary treatment of waste waters.

There is widespread agreement that the state needs to improve oil spill prevention and response programs. Major bills were introduced in the 1989-90 session to accomplish this. The initiative provides a different means of improving the state programs. The effectiveness of the initiative's provisions are uncertain and the legislation would provide greater financial resources to fight spills.

The impact of prohibiting leasing of state offshore areas for the extraction of oil and/or natural gas is uncertain. Most development has been in federal waters and the state has not leased new tracts for over 20 years.

Prohibiting the discharge of pollutants into coastal waters unless the discharged water receives secondary treatment is consistent with existing law. However, waivers can be granted to allow the continued discharge. The initiative would eliminate the use of waivers and probably hasten compliance with the secondary treatment standard.

Marine Water Quality Protection

The measure makes several changes in the state's water quality regulation programs regarding marine bays, estuaries, and coastal waters. Some provisions are already required by federal or state law, but are not being implemented because of cost. Others expand existing law and a few add to existing water quality protection programs.

The State Water Resources Control Board (state board) estimates the annual cost of implementing the initiative would exceed $10 million. The annual fees on dischargers, set up by the initiative to defray the costs of implementing the program, are limited to a total of $2 million. If the state board estimates are correct, there will be insufficient revenue from these fees to cover the cost of implementing these sections. The difference ($8 million) would have to be paid out of the General Fund.

The purpose of these provisions is to improve water quality by reducing discharges of toxic chemicals and to protect the existing beneficial uses of marine waters. We cannot compare the estimated costs and benefits of these changes because it is extremely difficult to quantify the benefits they would provide.

Environmental Advocate and Enforcement

The act establishes an environmental advocate to implement this act and to fully enforce all state laws relating to environmental protection and public health. The act also creates a Council on Environmental Quality to report on the state of the environment and to issue research grants for environmental protection.

Programs to provide environmental protection are scattered throughout state government. This has caused overlap among state agencies in regulatory activities, with no agency or person having the responsibility to assess the overall adequacy of environmental protections. Current law does not give a clear mandate to any one person or agency to be an advocate for all environmental protection programs. There is a need to create a system to better integrate environmental protections. The initiative is very general in its mandate for its advocate and council, but does set up an administrative system that could address the problems caused by a fragmented regulatory system for environmental protection.

KNOWN POSITIONS

Sponsors

Al Meyerhoff, Natural Resources Defense council
Attorney General John Van de Kamp
Assemblyman Tom Hayden

Assemblyman Lloyd Connelly
Michael Picker, National Toxics Campaign
Carl Pope, Sierra Club California
Bob Mulholland, Campaign California

Support

Butte County Democratic Central Committee
California League of Conservation Voters
Californians Against Waste
Campaign California
Chico Democratic Club
Citizens for a Better Environment
City of Laguna Beach
City of Santa Monica
City of West Hollywood
Committee for Sustainable Agriculture
Heal the Bay
Hollywood Women's Political Committee
Los Angeles County Democratic Party
Mothers and Others for Pesticide Limits
National Council of Jewish Women, Los Angeles
National Toxics Campaign
Natural Resources Defense Council
Pesticide Watch
Planning and Conservation League
San Francisco Friends of the Urban Forest
Sierra Club of California
Silicon Valley Toxics Coalition
Toxics Coordinating Project
San Francisco Mayor Art Agnos
Los Angeles City Councilman Richard Alatorre
Assemblyman Tom Bane
Congressman Jim Bates
Assemblyman Tom Bates
Congressman Howard Berman
Los Angeles City Councilman Marvin Braude
San Francisco County Supervisor Harry Britt
Congresswoman Barbara Boxer
Director Region 2 Democratic Party, Arlie Caudle
Director Region 13 Democratic Party, Mary Custer
Assemblyman Peter Chacon
State Controller Gray Davis
Butte County Supervisor Jane Dolan
Los Angeles City Councilwoman Ruth Galanter
Assemblyman Elihu Harris
State Senator Gary Hart

Director Region 11 Democratic Party James Hilfenhaus
Assemblyman Phillip Isenberg
State Senator Lucy Killea
Assemblyman Johan Klehs
West Hollywood City Councilman Paul Doretz
Assemblyman Burt Margolin
Lieutenant Governor Leo McCarthy
Contra Costa County Supervisor Sunne Wright McPeak
Assemblyman Jack O'Connell
State Senator Nicholas C. Petris
Los Angles City Councilwoman Joy Picus
Los Angeles County District Attorney Ira Reiner
State Senator Herschel Rosenthal
State Senator Art Torres
Los Angeles City Councilman Joel Wachs
Los Angeles City Councilman Zev Yaroslavsky
Los Angeles City Councilman Michael Woo
Santa Monica Mayor Denny Zane
Laboratory Film/Video Technicians
Laborers International Union Local 300
Local 683 International Association of Theatrical and Stage Employees
Local 18 International Brotherhood of Electrical Workers

Oppose

Barbara Keating-Edh, Consumer Alert
Al Stehly, family farmer
Larry McCarthy, California Taxpayers' Association
California Coordinating Council
Association of California Water Agencies
California Chamber of Commerce
California Manufacturers' Association
California Women for Agriculture
Agricultural Council of California

SECTION ON PESTICIDES

SUMMARY OF KEY PROVISIONS

- Provides for the gradual cancelation (within five years) of food-use pesticides known to cause cancer or reproductive damage. In certain situations (e.g., where there is not an alternative pest management practice and farmers will suffer economically) a three-year extension is allowed for a maximum of an eight-year deadline. Also sets food contamination limits on inert ingredients that cause cancer and reproductive damage.

- Provides for a reduction in the acceptable level of pesticide contamination of food. New contamination limits or "tolerance" levels would be set based on health standards (e.g., based on a safety factor rather than a cost-benefit analysis) and designed according to standards offering greater protections for infants and children.

- Transfers health-related pesticide regulatory functions from the Department of Food and Agriculture to the Department of Health Services. The transfer includes responsibilities for protecting farmworkers from pesticide exposure and establishing pesticide-residue levels.

- Prohibits the representation of produce at the retail level as having "no detected pesticide residue" unless: all pesticides used in production are disclosed; no pesticide known to cause cancer or reproductive harm was applied; no pesticide was used that cannot be detected by residue screens; no pesticide residue was detected at the lower of either practical detection limits or 50 parts per billion. This section of the new act would be terminated on November 7, 1998, when the provisions of the phased cancelations and new tolerance settings had been fully implemented.

- Requires the state pesticide regulatory system to be reviewed for its environmental impact. The pesticide regulatory program must comply with the California Environmental Quality Act and be recertified by July 1, 1992.

- Establishes a farmworker health and safety program. Removes the exemption of farmworkers from the worker right-to-know laws.

- Provides that a portion of a $40 million fund be used for research and demonstrations on alternatives to pesticides, including cancer-causing and reproductive-damaging pesticides listed for cancelation. The fund is to be administered by the Office of Environmental Advocate (an elected office established by this act).

Review of Specific Provisions

Each of the following sections describes in greater detail the major provisions of the initiative's proposed changes for regulating pesticides. Following each section is a brief discussion on policy and background issues.

Food Safety: Specific Provisions

- Bans within five years food-use pesticides that contain an active ingredient known to cause cancer or reproductive harm.

- Cancels within five years permissible contamination levels for food-use pesticides known to cause cancer or reproductive harm. Provides for a three-year extension if the registrant can demonstrate (1) severe economic hardship to agriculture, (2) no known alternative pest control or management strategy, (3) the level meets stated safety factors, and (4) the pesticide's use is reduced at least 10 percent over a five-year period.

- Requires the registrants of "high hazard" pesticides registered for use on food to demonstrate within four years that they do not cause cancer.

- Requires the Department of Food and Agriculture to provide for the collection and disposal of pesticides banned pursuant to this act.

- Requires petitioners for a new use of pesticides on foods to have already submitted adequate and complete chronic health-effect studies as required by the Birth Defect Prevention Act (Senate Bill 950, 1984).

- Prohibits the registration of food-use pesticides with an inert ingredient known to cause cancer or reproductive harm; currently registered products with such inerts are banned within two years. No inert ingredient may be used in a food-use pesticide unless the ingredient poses no significant risk.

- Provides a timetable, with January 1, 1997 as the latest date, for evaluating whether existing food contamination levels exceed no significant risk. Levels found to pose a significant risk will be modified or revoked.

- Prohibits any tolerance levels beyond January 1, 1997 unless a practical analytical method is available to monitor residues.

- Places the burden of proof on the registrant.

- Applies provisions relating to tolerance levels equally to foods produced inside and outside of California.

- Requires the Department of Food and Agriculture to maintain programs to monitor both raw produce and processed foods, and

to enforce pesticide tolerances. The monitoring must emphasize pesticides that pose the greatest risk (e.g., potential to cause cancer, reproductive harm, etc.).

- Requires an annual report to the Legislature.
- Provides that tolerance levels for produce also apply to processed foods.
- Requires that no claim of "no detected pesticide residue" may be made unless the following conditions are met: 1) all pesticides used are disclosed to the Department of Health Services and retailers, 2) accredited laboratory test results are submitted to DHS, 3) no pesticide has been used which is highly hazardous, known to cause cancer or reproductive damage, or lacks a practical analytic method for detection, 4) any residue present does not exceed practical detection limits or 50 parts per billion, whichever is lower.

The initiative also makes changes in certain other laws, including the Birth Defect Prevention Act, the Pesticide Contamination Prevention Act, the California Environmental Quality Act, as well as provisions relating to emergency eradication efforts and the control of human disease vectors.

ANALYSIS AND BACKGROUND

Both the U.S. Food and Drug Administration (FDA) and the California Department of Food and Agriculture (CDFA) maintain programs to test the food supply for the presence of pesticide residues. CDFA tests approximately 17,000 samples of more than 200 different food crops annually; the FDA examines approximately 15,000. The U.S. General Accounting Office has estimated that less than 0.2 of the nation's domestic food production is tested by FDA. The Assembly Office of Research has estimated that even a ten-fold increase in funding and staff would leave more than 90 percent of the nation's domestic food production untested.

The testing evaluates whether pesticides have been illegally applied to a crop or if the residues threaten human health. The U.S. Environmental Protection Agency is responsible for determining which pesticide residues will be allowed on individual crops and at what tolerances — the level at which pesticide residues are legally permissible in food. California has almost always followed EPA's tolerances. Federal and state laws authorize regulatory agencies to set tolerances or even ban chemicals found in or on food that are known to cause cancer or reproductive harm.

Although certain carcinogenic pesticides have been restricted or had their uses canceled, numerous pesticides known to cause cancer continue to be

applied on food crops. The initiative requires that stricter standards be used to determine if pesticides may be used on food products.

The initiative differs from current federal law in several important ways, but particularly with respect to the regulation of pesticide residues in or on food. First, the initiative prohibits setting tolerances for any pesticides known to cause cancer or reproductive damage. The U.S. Food, Drug and Cosmetic Act allows for the application of carcinogenic pesticides on food crops so long as tolerances are calculated not to result in more than one additional case of cancer for each million people believed to be exposed.

Current regulatory practices examine the likelihood of human cancers resulting from dietary exposures to pesticide residues on food and then calculate whether the risk is acceptable. According to a 1987 study produced by the National Academy of Sciences, 23 of 28 cancer-causing pesticides subjected to risk estimates exceed the threshold for acceptable cancer risk. Still other criticisms have been leveled at the regulatory process regarding tolerances, including the Natural Resources Defense Council's 1989 publication, Intolerable Risk:

- "Current legal limits for pesticides, or tolerances, in food are based on data collected over two decades ago on adult consumption levels. The consumption estimates that have been used by EPA in setting almost all current legal limits for pesticide residues on produce greatly underestimate preschooler intakes for most produce."[1]

- "The average preschooler exposure at legal limits to any one of the carcinogens captan, folpet and mancozeb would present a risk of approximately one cancer case for every 2,000 to 3,000 children exposed simply during their first six years of life (340-460 times greater than EPA's 'safe' standard of one cancer case per million following a full lifetime of exposure)."[2]

- Proponents have cited estimates that 20,000 avoidable cancer cases result annually in the United States due to pesticide residues on food.

Researchers with the University of California have stated that one provision, setting the maximum allowable risk of carcinogenicity to an exposed population at one case in a million (according to the most conservative risk assessment model that is scientifically valid), may eventually prove very significant. "Depending on future interpretation, this portion of the initiative could impact any pesticide that shows any measurable neurological, behavioral, or reproductive activity in test animals. It could also affect pesticides shown to be mutagenic in higher organisms. We cannot predict

with certainty, however, how this portion of the initiative would be interpreted."[3]

It is important to note that there have often been lengthy delays between knowing when a pesticide poses a hazard to human health and regulatory action restricting its use. Among the approximately 290 pesticides registered for use on foods, some 81 pesticides have been determined by the Environmental Protection Agency to be at least potentially carcinogenic. The EPA has canceled or restricted 18 carcinogenic pesticides, with the average time for cancelation lasting nearly four years but in a certain instance lasting more than seven years.[4]

Transferring Regulatory Jurisdiction: Specific Provisions

The act transfers from the Department of Food and Agriculture to the Department of Health Services the following responsibilities:

- Evaluation of health risks of pesticide exposure in food, air, water, the workplace, and the environment.
- Evaluation of health risks of pesticides and of tests conducted by pesticide registrants to determine health risks.
- Adoption of pesticide residue tolerances and workplace health standards.
- Any other authority necessary to protect public health and the environment from pesticide hazards.

It would allow the director of Health Services to restrict the distribution, sale, or use of any pesticide determined to pose a threat to public health. The Department of Food and Agriculture could not register a pesticide or permit a use that is inconsistent with a Department of Health Service regulation.

ANALYSIS AND BACKGROUND

The California Department of Food and Agriculture's (CDFA) regulation of pesticides has been criticized by numerous environmental groups, legislators, and researchers for many years. At various points there have been proposals to transfer CDFA's jurisdiction over pesticides to another agency because of perceived conflicts between the department's dual mandates of promoting the state's agricultural industry and protecting public health and the environment.

Conflicts among scientists and non-scientists at the California Department of Food and Agriculture have surrounded various decisions concerning the continued registration of pesticides. A recently published report by the Senate Office of Research, Regulation versus Practice, found evidence that

CDFA's supervisors had continuously disregarded its own scientists' recommendations not to register various pesticides due to inappropriate warning labels and undisclosed health hazards.

Various objections have arisen in recent years regarding CDFA regulatory actions, including decisions involving pesticide contaminants in water,[5] the regulation of toxic air contaminants,[6] assessing the health risks of pesticides,[7] and efforts to eradicate the Medfly.[8] In each of these instances independent scientists have raised critical objections questioning the department's ability to evaluate and respond to sound scientific information.

Agricultural Worker Health and Safety: Specific Provisions

The major provisions relating to agricultural worker health and safety include the following:

- Requires the Department of Health Services to carry out a worker protection program to prevent or reduce exposure to pesticides to the lowest achievable levels to assure that no worker will suffer impairment of health or functional capacity, assuming lifetime occupational exposure.

- Requires pesticide registrants to submit necessary data to the Department of Health Services and grants DHS access to all pesticide-related data at the Department of Food and Agriculture.

- Prohibits the registration of any pesticide unless the Department of Health Services determines the pesticide complies with all of the requirements.

- Places CDFA's worker safety regulations under the Occupational Safety and Health Standards Board. Requires the board to revise these standards by January 1, 1992 based on recommendations from the director of Health Services. These revised standards must include reentry intervals for all crops and the maintenance of pesticide use records for a period sufficient to evaluate chronic health effects. Standards are prescribed for toxic categories, unless the registrant demonstrates the safety of a shorter interval.

- Requires the Department of Health Services, with assistance from other agencies, to develop a program to ensure the investigation and abatement of any health hazard from pesticides.

- Requires the Department of Industrial Relations to provide agricultural workers with a right-to-know about hazardous substances and makes all pesticides hazardous substances.

ANALYSIS AND BACKGROUND

The occupational problems confronting farmworkers include heat stress, pesticide-related illness, dermatitis, musculoskeletal problems, accidents, and a variety of short- and long-term health threats. These conditions are not mutually exclusive and the presence of one condition may increase an individual's chance of developing other problems; for example, a heat-stressed farmworker may be more susceptible to the toxicity of a pesticide.

Furthermore, other aspects of living conditions associated with agriculture may compound health problems. Substandard and unsanitary housing or living conditions in which farmworkers and their families may be exposed to pesticide spray can also be considered a part of occupational hazards.

The rates of traumatic occupational fatalities in agriculture typically are among the highest for major industries in California. For the period 1980-1985 the rate of traumatic occupational deaths in agriculture was double the statewide average for all industries. The situation is similar for occupational illness. In 1987 pesticide illnesses ranked among the top 10 notifiable diseases in California. Health professionals have concluded that California farmers and farmworkers experience excessive rates of fatal and non-fatal occupational injuries.[9]

Agricultural worker right-to-know was left to the Department of Food and Agriculture 10 years ago when California enacted its own worker right-to-know law. Since that time, the department has failed to adopt any right-to-know provision for farmworkers.

Federal law requires most employers to provide notification to workers regarding hazardous substances in the workplace. In 1988 this law was expanded to include agricultural employees. California, although required to adopt provisions for agricultural employees that are at least as effective as federal law, has failed thus far to conform with federal law.

Domestic and International Trade — Specific Provision

- Restricts the trade of agricultural products, either foreign or domestic, which contain residues of a pesticide or ingredient that has been canceled, exceeds new health protective standards, or contains residues of a highly hazardous pesticide with insufficient evidence to demonstrate that it does not cause cancer or reproductive damage.

BALLOT ANALYSIS:

Proposition 128: Environmental Protection Act of 1990.

ANALYSIS AND BACKGROUND

On July 10, 1990 the California State World Trade Commission held a hearing on the potential trade effects of the initiative. The commission stated that the initiative would assign strict chemical limits and could result in conflicts between state and federal law due to different food safety standards. The commission noted that certain European countries have expressed concern regarding the extent to which states, such as California, may be erecting barriers to trade that are different than federal standards for the United States. The commission concluded that the resulting conflict between state and federal law could create a serious threat to U.S. progress toward liberalizing trade and harmonizing international standards.

Other observers, most notably the Natural Resources Defense Council, have criticized international food standards (i.e., those established by the Codex Alimentarius Commission) as weaker than U.S. food standards in various instances (e.g., food standards for DDT, diazinon, and aldicarb). Earlier discussions this year among nations regarding international trade (the Uruguay Round of the General Agreement on Tariffs and Trade or GATT) initially proposed a "scientific consensus" before any subnational government, such as California, could establish more restrictive food safety standards than national ones.

More recent discussions at the international level have yielded some agreement on a greater autonomy for California to establish its own food safety standards, although there remain significant disputes concerning the sufficient and necessary procedures (e.g., risk assessment). Ironically, the international discussions (GATT) appear to support a more independent role for California to establish its own food safety standards than do statements issued by the California State World Trade Commission.[10]

DISCUSSION OF POLICY ISSUES

How many pesticides are affected by the initiative?

Depending on who is counting, the initiative will phase-out 19 (according to the Natural Resources Defense Council), 36 (according to the University of California), or 60 pesticides (according to certain agricultural organizations). As Professor Sandra Archibald of Stanford University notes, the ability to accurately analyze impacts, such as benefits and costs, is confounded by the uncertainty about which chemicals would be affected by the initiative and within what time frames.[11]

It may be important to note that various laws are likely to further restrict or even eliminate many of the same pesticides targeted for cancelation by the initiative. Some California laws that may limit or ban specific pesticides include the Birth Defect Prevention Act (SB 950), the Pesticide Contamination Prevention Act (AB 2021), the Safe Drinking Water and Toxic Enforcement Act (Proposition 65), and the Air Toxics Act (AB 1807).

For example, the registrants of two pesticides (Mancozeb and Maneb) listed in the initiative have thus far failed to provide a commitment to generate data, which could lead to the cancelation of their products registered for sale in California.[12] Recent findings of air and water contamination by Telone and Aldicarb also threaten various uses of these pesticides, which are also subject to the initiative's cancelation provisions.

The recently reauthorized federal pesticide laws represent another factor impinging on the continued registration of highly hazardous pesticides. A recent survey by Rutgers University identifies several pesticides listed in the initiative as among a group of pesticides for which the manufacturers may no longer support continued registration. These examples include dicofol (used on apricots, cherries, clover), daminozide (used on grapes, nectarines, peaches), and captan (used on limes, oranges, onions).[13]

Other federal laws and regulations developed in accordance with these laws, such as the Occupational Safety and Health Act or the Toxic Substances Control Act, provide other indirect mechanisms that may further restrict or eliminate the uses of selected pesticides. Their combined effect is likely to further restrict pesticides, particularly those found to cause cancer or reproductive damage.

Additionally, there are studies and legislative proposals in progress that may further reduce the use and sale of specific pesticides. Studies, such as one being conducted by the National Academy of Science's Board on Agriculture, have the potential of generating additional pesticide regulations, particularly among those substances recognized as causing cancer or reproductive damage. And as evinced in the case of Alar applications on apples, public reaction to specific findings can result in market changes independent of regulatory actions.

Determining which law, including the proposed initiative, will have the most direct impact on pesticides is, therefore, a problematic exercise. In the absence of the initiative, it is likely various pesticides recognized as causing cancer and reproductive damage will face further restrictions or cancelations of use. The Environmental Protection Act, however, is likely to accelerate the trend of further restricting pesticides known to cause cancer, paralleling other recently adopted state and federal laws.

The initiative accelerates the removal of pesticides posing a known hazard by circumventing the lengthy delays surrounding a current regulatory step — the risk assessment process. The initiative, instead, takes the scientific fact that a pesticide has been found to cause cancer or reproductive harm and moves to a subsequent step of preventing exposures by eliminating its uses on food.

What Alternatives Are There for Pesticides Posing a Known Health Hazard?

In 1989 the University of California convened a task force on pest control alternatives to examine the implications of current and proposed laws that would remove certain pesticides from use. The university's task force generated several studies with various findings, including this general statement:

"Many factors will determine whether these and other available nonchemical alternatives are economically viable or compatible with current production practices that yield products acceptable to the consumer. Some crops will be affected more than others by the loss of specific pesticides."

"Crops with limited national acreage or relatively low total value will be particularly hard-hit, since registering new pesticides for such crops has always been difficult and expensive. The availability of a specific alternative may be debatable; some alternatives, while promising, have not had adequate development or testing, and their impacts, economics, and availability remain unknown."[14]

There appears to be a general agreement that whatever the effect of this initiative on specific pesticides, the combination of state and federal laws has already created a need for an intensified research effort to identify alternative pest management practices.

What are the Consequences of Banning Specific Pesticides?

Because of the various uncertainties regarding the initiative's impact, such as knowing the chemicals to be banned or the available alternatives, it is exceedingly difficult to anticipate the consequences for farmers.

Professor Archibald, for example, has cited a survey analyzing the loss of sulfur on grapes: "Producers expect up to 100 percent yield losses in some years depending on weather."[15] Proponents, however, disagree that sulfur is even among those pesticides subject to the eventual phase-out.

Part of what further complicates evaluating impacts for farmers are overstated industry estimates. The initiative's proponents, for example, point to the 1977 ban of DBCP, a fumigant, during which time grower organizations stated that no alternatives were available and that no grapes or citrus could be grown in California. "No measurable losses were recorded and no price rise was linked to the ban." Furthermore, University of California pest management experts have stated that the commodity groups appear to have funded few research projects since 1977 to examine alternative pest management options following the ban of DBCP.[16]

FISCAL IMPACT

The legislative analyst has noted that in addition to the direct fiscal impacts on state and local government, the initiative might have indirect fiscal impacts. These include potential changes in private sector activities, such as "the cost of producing some agricultural crops if farmers cannot find economical alternatives for controlling pests" or a reduction in "the number of Californians who experience adverse health effects such as cancer or respiratory ailments."

The most important impact for consumers, as an indirect consequence of further regulating certain pesticides, concerns food prices.

What are the Anticipated Costs to Consumers?

There are widely divergent opinions regarding the costs to consumers anticipated to result from the pesticide provisions of the initiative. While estimates range from a minimal effect to a 30 percent rise in food prices, there is largely an absence of serious investigations concerning the specific effects of the initiative measure.

One study of the initiative that examined the consequences of phasing out 19 pesticides has been produced by Professor David Pimentel at Cornell University. Dr. Pimentel has provided the following findings:

"Based on this preliminary analysis of available data, consumer food prices apparently will not increase, if some of the currently used pesticides are substituted for the 19 pesticides that might be withdrawn from use if the Environmental Protection Initiative is adopted. This is based on the assumption that the substitute pesticides that are available and currently used in California are similar in efficacy and economics to those proposed for withdrawal."

"Even if, per chance, pesticide control costs were to increase 25 percent over present levels for oranges, grapes, lettuce, almonds, and strawberries, actual food price increases to the consumer would be only 0.2 percent. Therefore, one can be relatively confident that withdrawing the 19 hazardous pesticides from use will not greatly affect consumer prices, if at all."[17]

ENDNOTES

Note: The discussion of food safety is marked by numerous and serious disagreements. A University of California Task Force on Food Safety, for example, containing representatives from agriculture, regulatory agencies, and public interest groups has endeavored to produce a balanced statement about food safety. After several meetings extending from 1989 to 1990, the members of the task force recently concluded that no statement could be generated which met with the

satisfaction of all members.

While the Senate Office of Research has attempted to provide an overview of these issues, readers are advised to review and consider the specific documents prepared by proponents and opponents as well as materials provided by universities, state agencies, and independent authors.

1. "Intolerable Risk: Pesticides in our Children's Food," (San Francisco: Natural Resources Defense Council, February 1989), p. 13.

2. Ibid., p. 12.

3. Michael W. Stimmann and Mary P. Ferguson, "Potential Pesticide Use Cancellations in California," California Agriculture, (Berkeley, CA: University of California, Division of Agriculture and Natural Resources, July-August 1990), p. 5.

4. U.S. Congress, Office of Technology Assessment "Identifying and Regulating Carcinogens: Background Paper" (Washington, D.C., U.S. Government Printing Office, November 1987), p. 119.

5. See: The Pesticide Contamination Prevention Act Subcommittee recommendations of September 27, 1989 and the directors' October 27, 1989 decision on Aldicarb.

6. See: Dr. Stanton A. Glantz December 27, 1989 correspondence to Senator David Roberti regarding the department's response to recommendations of the Scientific Review Panel.

7. See: "Natural Resources Defense Council's Response to Common Criticisms of the Intolerable Risk Report," pp. 4, 5 and 8.

8. See remarks provided by Professor Donald Dahlston at the Joint Legislative Budget Committee Hearing, "The Fiscal Impact of Continued Efforts to Eradicate the Mediterranean Fruit Fly," (Sacramento, CA: Joint Publications, April 17, 1990); or "The Return of the Medfly," Assembly Office of Research (Sacramento, CA: Joint Publications, March 1990).

9. Dr. Neil Maizlish, "Epidemiology of Injuries in the Agricultural Workplace," Presented at Agricultural Worker Health and Safety Conference, Davis, California. June 7-8, 1990.

10. Inside EPA: Weekly Report, Vol. 11, No. 29 (Washington, D.C.: Inside Washington Publishers, July 20, 1990), p. 16.

11. Sandra Archibald, Statement before the United States International Trade Commission (San Francisco, CA: July 10, 1990).

12. Senate Bill 950 Update (Sacramento, CA: California Department of Food and Agriculture, 1990).

13. Red Alert (New Jersey: Rutgers University, August 1989).

14. James M. Lyons and Frank G. Zalom, "Progress Report: Vice President's Task Force on Pest Control Alternatives," California Agriculture (July-August, 1990), p. 1.

15. Archibald.

16. "Cost and Feasibility of Environmental Protection Act," CEPA Background Statement, undated.

17. David Pimentel, "The Potential Impact of the Withdrawal of 19 Pesticides Based on the Proposed Environmental Protection Initiative: A Preliminary Assessment," (Department of Entomology, Cornell University, Ithaca, New York, June 28, 1990).

GREENHOUSE GAS REDUCTION PLAN

SUMMARY OF KEY PROVISIONS

Section 14 of the act requires the California Energy Commission (CEC) to adopt and implement a plan to reduce emissions of all gases that contribute to global warming. According to the act, the CEC plan shall require a 20 percent reduction in CO_2 emissions between 1988 and 2000, and a 40 percent reduction between 1988 and 2010.[1] The act requires the CEC to administer its plan as it relates to stationary sources of greenhouse gas emissions, unless local air pollution control districts request authority to do so from the CEC. The act requires the California Air Resources Board (ARB) to administer the CEC's plan as it relates to vehicular sources of emissions. The act requires state and local agencies to adopt any regulations needed to implement the CEC's plan, and prohibits them from taking any action that is not consistent with the plan.

BACKGROUND

Human Activity Increasing Greenhouse Effect. Human activity is significantly increasing atmospheric levels of greenhouse gases, such as carbon dioxide (CO_2), methane, chlorofluorocarbons, smog, and nitrous oxide. Carbon dioxide accounts for about one-half of the increasing greenhouse effect. According to many scientists, increases in greenhouse gases could raise global temperatures by up to 8° Fahrenheit within the next century.

Scientists disagree about whether the earth's temperature already has risen, but most agree that the global climate probably will change significantly as the amount of greenhouse gases in the atmosphere increases.

Adverse Effects of Global Climate Change. Significant changes in the global climate could cause, for example:

- Severe flooding, shortages of usable water, and increased water pollution.
- Ocean level increases of up to five feet, resulting in increased flooding and salt water intrusion.
- Increased air pollution.
- Reduced forest growth and increased forest damage from fires, disease, and pests.

Uncertainty in Predictions, But Risks High. Scientists are not able to forecast exactly how the global climate will change or exactly what damages will occur, but most agree that global temperatures likely will rise and that the risks of damages are great.

California Big Contributor. The United States and California contribute significantly to the increased greenhouse effect. The United States, with 5 percent of the world's population, for example, is responsible for about 24 percent of global CO_2 increases. California, with about .6 percent of the world's population, is responsible for about 1.5 percent of CO_2 increases. California is also a significant contributor of the other greenhouse gases.

ANALYSIS OF POLICY IMPACT

The act requires the CEC to implement a plan to reduce greenhouse gas emissions, but does not specify how much of such gases (except for CO_2, which we discuss below) the CEC's plan should attempt to reduce. As a consequence, we do not have any basis for estimating the effect of the act on activities that produce greenhouse gases other than CO_2. To reduce man-made emissions other than CO_2, the CEC's plan would have to address the following major emission sources:

- **Methane:** Produced by rice growing, cow and sheep grazing, oil and gas production and distribution.
- **Nitrous Oxide:** Produced by fossil fuel burning, use of fertilizers, land disturbances.
- **Chlorofluorocarbons:** Used as a refrigerant and as a solvent.

- **Smog:** Generated by fossil fuel burning, use of petroleum-based solvents and coatings.

Reducing CO_2 Means Reducing Fossil Fuel Use. To achieve a 20 percent reduction in statewide CO_2 emissions by 2000 and a 40 percent reduction by 2010, the amount of fossil fuel consumed in the state would have to decrease by 20 and 40 percent. In California, about 58 percent of CO_2 comes from fossil fuel burned in motor vehicles (34 percent) and other transportation sources (24 percent). The balance of man-made CO_2 emissions comes from fossil fuel burned in industry (24 percent), in power plants (8.6 percent), and in homes (8.5 percent). As of 1986, 72 percent of CO_2 produced in California came from gasoline consumption, 27 percent from natural gas consumption, and 1 percent from coal use. In addition, Californians consume 8 percent of its electricity from out-of-state coal-fired power sources, which produce large quantities of carbon dioxide. The act requires the CEC to include within its plan CO_2emissions from out-of-state sources of electricity that are consumed in California.

Switching to Other Fuels Big Challenge. Reducing CO_2 by 40 percent would require that Californians replace fossil fuels with other non-fossil fuel sources. This would force significant economic and social changes. California's electricity needs, for example, are met by fossil fuel (59 percent), hydroelectric (23 percent), nuclear power (14 percent), geothermal (4.2 percent), wind (.35 percent), solar (.3 percent), and biomass burning (.3 percent). It may be very difficult for the state to shift to non-fossil fuels to the extent needed to reduce CO_2 emissions by 40 percent by the year 2010, particularly in light of projected state population growth of 30 percent during that period.

Demand for Fossil Fuel Use Expected to Increase. According to the Energy Commission, electricity consumption in the state will increase by about 55 percent between 1985 and 2007. The California Department of Transportation estimates the number of vehicle miles traveled in California will increase by about 50 percent between 1988 and 2010. Electricity and motor vehicle use currently account for over 43 percent of CO_2 emissions in California.

Proponents Argue that CO_2 Reductions Are Achievable. According to proponents of the act, California can achieve the 40 percent reduction in CO_2 using proven energy conservation and efficiency technologies.[2] The proponents assert, for example, that the following measures taken together could reduce emissions by more than 40 percent if CO_2 is measured on a per capita basis:

- Doubling the average fuel economy of new motor vehicles from 27 to 54 miles per gallon (45 percent of mandated2 reduction).

- Planting trees and painting surfaces light colors in urban areas to reduce local temperatures and reduce cooling needs (16 percent of mandated reduction).
- Improving lighting and appliance efficiency (12 percent of mandated reduction).
- Increasing use of renewable resources for energy production (10 percent of mandated reduction).
- Improving industrial efficiency (7 percent of mandated reduction).
- Improving building efficiency standards (7 percent of mandated reduction).
- Managing forest lands better (7 percent of mandated reduction).
- Improving mass transit programs (2 percent of mandated reduction).

Dramatic Changes Needed to Reduce CO_2 as Act Requires. The type, extent, and cost of changes that California would have to make to reduce its total CO_2 emissions by up to 40 percent is not known. It is likely that any CEC plan to reduce CO_2 emissions by such an amount would not be feasible, absent comprehensive and strict prohibitions on the use of fossil fuels. The average fuel economy of both old and new California cars would have to increase, for example, from 19.9 miles per gallon (1988) to 52 miles per gallon by 2010. This estimate assumes that Caltrans' estimates of future vehicle use are accurate and that motor vehicles contribute a proportionate share of the 40 percent reduction. Reducing CO_2 emissions by up to 40 percent from 1988 levels could adversely affect the California economy, which relies significantly on fossil fuels.

Benefits of Greenhouse Gas Emission Reductions Difficult to Assess. Given the uncertainties associated with how the increasing greenhouse effect will affect global and local climate, we do not have any basis on which to estimate the effect of reducing greenhouse gas emissions, including CO_2. Furthermore, California produces 1.5 percent of CO_2 emissions. Reducing California emissions by 40 percent would reduce worldwide CO_2 emissions by .6 percent. We do not have any analytical basis for determining what effect such a reduction in worldwide emissions would have on global climate. Nevertheless, as a leading producer of greenhouse gases, California might also become a leader in innovative ways to reduce greenhouse gas emissions. State efforts to reduce greenhouse gas emissions might encourage other states and countries to reduce their emissions as well.

Significant Air Quality Benefits from Reducing CO_2. If CO_2 emissions are reduced by up to 40 percent as a result of this act, air quality in the state would improve significantly. This is because most constituents of air pollution are produced from fossil fuel combustion. Reductions in air pollution would benefit the state's economy significantly, because air pollution causes major health, property, environmental, and aesthetic damages in the state.

FISCAL IMPACT

Administrative Costs. The Energy Commission estimates that developing and implementing the greenhouse gas reduction plan required by Section 14 of this act will cost the commission approximately $1 million. The Air Resources Board estimates that it will incur costs of approximately $3 million per year. Other state and local governments will incur potentially significant costs as well to implement Section 14.

Operating Costs. State and local government agencies would incur unknown but potentially major increases in energy and related costs as a result of restrictions on fossil fuel use that Section 14 of this act would require.

ENDNOTES

1. The act states that "These percentages shall be adjusted, if necessary, by a corrective factor which reflects any difference between the projected rate of population growth in California, and the projected rate for the United States." Some people have asserted that this means the required reductions in CO_2 will be on a per capita basis. This language, however, does not appear to establish such an adjustment. The meaning of the statement is not clear, although it appears to relate to differences in California and U.S. growth rates.

2. It appears that this assertion assumes that CO_2 emissions are measured on a per person basis, which the act does not specify. Air quality experts in the South Coast Air Quality Management District, for example, state that the 40 percent reduction in CO_2 is feasible if adjusted for population growth.

SUMMARY OF KEY PROVISIONS

STRATOSPHERIC OZONE LAYER PROTECTION

This Section establishes a program and schedule for the prohibition, and/or recycling of specified ozone depleting chemicals and of certain products containing, manufactured with, or using these chemicals.

The act identifies these as "Group I" and "Group II" chemicals.

"Group I chemicals" include:

Chlorofluorocarbon-11, CFC-12, CFC-113, CFC-114, CFC-115 Halon-1211, halon-1301, halon-2402, carbon tetrachloride, methyl chloroform.

"Group II chemicals" include:

Hydrochlorofluorocarbons (HCFC) and any other chemical determined by Air Resources Board to deplete stratospheric ozone.

Specifically, the act would:

By January 1, 1992:

- Prohibit the production, sale, or use of aerosol products containing or manufactured with Group II chemicals.

By January 1, 1993:

- Prohibit the manufacture, sale, or use of Group 1 chemicals for packaging material or for containers that hold less than 15 pounds of Group 1 chemicals.

- Require maximum recovery and recycling of Group I Chemicals during servicing and disposal of air conditioning and refrigeration systems and appliances, including automobile air refrigerants, and when disposing of building and appliance insulation.

- Require the reduction of emissions by at least 90 percent of Group I chemicals used as foam blowing agents, solvents, or for any other industrial manufacturing purpose.

By January 1, 1994:

- Prohibit the production, sale, or use of foam products (other than insulating materials) containing or manufactured with Group II chemicals.

By January 1, 1995:

- Prohibit the sale of new motor vehicles with air conditioners that use Group I chemicals.

- Prohibit the sale of foam products that contain Group I chemicals.

By December 31, 1996:

- Prohibit the manufacturing, sale or use of any Group I chemicals.

By January 1, 2020:

- Prohibit the production, sale, or use of any product containing or manufactured with Group II chemicals or the use of such chemicals.

The act allows extension of the above deadlines under limited circumstances.

BACKGROUND

Currently, scientific consensus exists that CFCs, halons and other halogenated substances are the major contributing factor in the depletion of the earth's stratospheric ozone layer. Any decrease in total ozone leads to increased exposure to ultraviolet (UV) radiation by humans and the environment. This, in turn, could result in an increased incidence of skin cancer and cataracts, a negative impact on human immune systems, damage to plants and aquatic systems, a reduction in vital crop yields, and accelerated solar weathering of UV-sensitive building materials. It is also postulated that these chemicals are contributing to the global warming effect which can cause substantial climate-related changes.

Migration of CFCs and halons to the stratosphere has global implications. In 1987, 56 nations, including the United States, signed the Montreal Protocol on Substances that Deplete the Ozone Layer, commonly referred to as the Montreal Protocol. This agreement sets forth a timetable for reducing the most potent ozone-depleting chemicals.

To implement the Montreal Protocol, the U.S. EPA issued regulations to limit the production and consumption of high ozone-depleting CFCs. Since then, the EPA has called for a complete phaseout of the more harmful CFCs and halons by the year 2000. In April 1990, the EPA announced that it is considering a nationwide program for recycling CFCs used for air conditioning and refrigeration systems. To this end, on May 1, 1990, EPA published an Advance Notice of Proposed Rulemaking (40 CFR Part 82). As part of these proposed regulations, EPA is considering whether or not to preempt any law adopted by state or local governments.

In June 1990, at the United Nations-sponsored environmental conference in London, 53 of the countries that signed the 1987 Montreal Protocol agreed

to expand its scope and stringency. They agreed to phase out consumption of the five most widely used CFCs by the year 2000.

At the conference representatives from 13 nations issued a joint statement expressing dissatisfaction over the new accord and calling for a total ban on CFCs as early as possible before 1997. The United States, Japan and the Soviet Union insisted on setting the target date for the year 2000.

CFCs as a class of chemicals were discovered in the 1930s. Refrigeration and air conditioning systems use CFCs extensively. CFCs are also used as cleaning agents for electronic components. They are used in rigid foam for home insulation and packaging, and as flexible foam for carpet padding and furniture cushions.

CFCs have many useful applications, but unfortunately, their very desirable high chemical stability is also the cause of concern about them. CFCs do not breakdown in the lower atmosphere but migrate slowly to the stratosphere where higher energy radiation strikes them, releasing chlorine. Once freed, the chlorine acts as a catalyst repeatedly combining with and breaking apart ozone molecules.

CFCs are emitted into the air when a product using CFCs is manufactured, operated, serviced or disposed. Some emissions occur at the beginning of the life of the product as is the case for CFC-based solvents and flexible foam. CFCs used in automobile air conditioners are usually emitted gradually or until disposal. CFCs are emitted from refrigeration systems primarily when the systems are serviced, leak during operation, totally fail and the refrigerant is vented into the air, or when they are disposed.

Legislative History

In the last two years four bills relating to CFCs were passed by the Legislature, and except for AB 1736, all were vetoed by the governor. AB 1736 (Friedman) requires the Air Resources Board to report on the adequacy of programs to reduce CFC emission from vehicle air conditioning systems. AB 3761 (Connelly) would have restricted the use of CFCs in fast-food containers and other packaging materials, AB 116 (Rosenthal) would have required the recycling of commercial refrigeration systems, SB 231 (Roberti) would have set up a program for the identification and use of alternative substances to CFCs.

This year, several bills were introduced by legislators to mandate recycling, reduction, or elimination of CFCs in specified applications. These were:

SB 1764 (Roberti)	-	product replacement,
SB 1790 (Rosenthal)	-	recycling refrigerants,

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SB 2400 (Marks)	-	CFC ban on foams and use study (Vetoed by the governor),
SB 2871 (Bergeson)	-	reduction of ozone- depleting compounds,
SB 1332 (Peace)	-	prohibition on auto air conditioners,
AB 1718 (Hayden)	-	recycling auto refrigerants,
AB 2532 (Vasconcellos)	-	recycling auto and other refrigerants.

ANALYSIS OF POLICY IMPACT

There is no specific state law to prohibit the manufacture or use of ozone-depleting chemicals or require their recycle or reuse.

Basically, the act proposes to reduce or eliminate emissions of ozone-depleting chemicals by prohibiting their manufacture after a specific date and/or by requiring their recapture, recycle or reuse.

Prohibition/Phaseout. As mentioned above, EPA has recently called for a complete phaseout of the more harmful CFCs and halons. The act proposes to phase out these same chemicals as well as carbon tetrachloride, which is also a carcinogen, and methyl chloroform, which has a lower ozone-depletion potential, but is widely used and has much potential for growth. While there are chemical substitutes that have a lesser ozone-depleting effect, these may often involve substantial changes in operating and product design before they can be used as replacements. In addition, significant research must be conducted to assure that these substitutes do not have health, safety, and environmental side effects.

Recycling and Reuse. Generally, the best way to immediately reduce the emissions of ozone-depleting chemicals is to recover and reuse them. The act requires, by January 1, 1993, maximum recovery and recycling of Group 1 chemicals used as refrigerants and insulation, and 90 percent of those chemicals that are used in foam, solvent, or other manufacturing uses. Depending on the characteristics of the ozone-depleting chemical-using product, recovery and recycling can take place at the site, such as when an air conditioner is being serviced. Products also can be taken off-site for recycling and reuse, or can be recycled when disposed.

Depending on the particular system, recycling and reuse is cost effective. As production restrictions make certain ozone-depleting formulations scarce, their cost will increase and recycling will become even more economical.

BALLOT ANALYSIS:

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FISCAL IMPACT

Unknown, but probably substantial costs to the Air Resources Board to develop regulations for safe substitutes for Group I chemicals, program implementation, and petition process. Significant costs to the Bureau of Automotive Repair for establishing and administering a program to require, statewide, the establishment of recycling equipment to recycle automobile refrigerant. Significant costs to state and local agencies for meeting the recycling and reuse requirements established by the act. However, these costs may be equalized, if not decreased, by avoiding the purchase of virgin chemicals, which likely will cost more as the supply diminishes.

Proponents' Explanation for the Initiative

Proponents cite a list of reasons for qualifying Proposition 128 for the November ballot:

- **Limitations of current law.** State agencies do not have direct authority to control CFC and halon emissions. Current reduction in CFC use is governed by the Montreal Protocol.
- **Limitations of international agreement.** The Montreal Protocol (as conceived when the initiative was drafted and circulated) called for worldwide production of only five CFCs and three halons to be reduced to 50 percent of 1986 production levels. Note: The protocol has been renegotiated. See "Background" section above.
- **Failed legislative efforts.** As mentioned above, several bills were passed by the Legislature but the governor vetoed all but one.
- **California is a major contributor to ozone depletion.** California contributes as much as 5 percent to the worldwide global warming problem, therefore, California must play a major role in helping to prevent damaging climate change.

COMMERCIAL AND RESIDENTIAL TREE PLANTING

SUMMARY OF KEY PROVISIONS

The act requires the state Resources Agency to adopt regulations to require any person constructing a project to plant one tree for each 500 square feet of the project. The act does not define the term "project," but uses the term in the context of construction. Presumably, the area of a project would include the land upon which actual construction takes place, such as the construction of buildings, parking lots, roads, etc. "Project" presumably

would not include associated lands that do not have any improvements upon them. The act specifies that the regulations shall maximize CO_2 absorption, energy conservation, and long-term tree maintenance. The act establishes the following priorities for where the trees should be planted:

- At the site of the project,
- On private property or along public streets within five miles of the project,
- On public or private land, or along public streets, within the same geographic area.

The act also permits persons with projects to pay the state to plant and maintain the required number of trees.

BACKGROUND

Trees Absorb CO_2. Humans are destroying about 40,000 square miles of forest per year, particularly in the tropics. This is equivalent to denuding tropical forests covering an area the size of Louisiana—each year. Destruction of forests worldwide accounted for about 30 percent of CO_2 increases during the 1980s. This increase in CO_2 production results from increased burning and decay of vegetation, and reduced capacity for photosynthesis, in which vegetation converts CO_2 to oxygen.

Trees Reduce Local Temperatures and Reduce Energy Use. Trees and other vegetation also cool buildings and populated areas, increasing the level of comfort and reducing demand for electricity used to run air conditioners. Saving electricity, in turn, reduces the amount of fossil fuel burned to produce electricity and the amount of chlorofluorocarbons (CFCs) used in air conditioners. Trees mitigate global warming by absorbing CO_2, cooling the local environment, and reducing emissions of CO_2 and CFCs that result from air conditioner use. Trees also provide many ecological and aesthetic benefits.

Forests Being Destroyed Worldwide. Brazil leads the world today in forest destruction. It destroyed about 1 percent of its forests in 1988 alone. The U.S. Forest Service estimates forest land in the U.S. has decreased roughly 30 percent since the 17th Century. The Forest Service estimates that forest lands and timberlands (commercial forest lands) have decreased by about 8 percent and 2 percent, respectively, since 1953.

Planting Trees Can Reduce CO_2 and Energy Demand. A scientist at the Lawrence Berkeley Laboratory estimates that the maximum annual high temperature in Los Angeles has increased by 7°F. as a result of reduced vegetation and associated irrigation. According to the chief of the American

Forestry Association, there is room in the United States to plant about 100 million additional trees around homes and in cities. He estimates that planting 100 million trees in U.S. cities would offset over 18 million tons per year of CO_2 emissions, or the amount produced by about 2.7 million cars per year. He estimates that the trees would save about $4 million per year in energy costs. Proponents of the act estimate that it will cause one million more trees to be planted in California each year. Based on the statistics cited above, this would offset the CO_2 from an additional 27,000 cars each year.

ANALYSIS OF POLICY IMPACT

Cost of Tree-Planting Requirement Not Great. The average California single-family home built in 1988 was 1,800 square feet and cost $190,000. The act would require the builder of such a home to plant four trees. Based on our informal survey of landscape contractors, it costs about $260 including labor to plant four trees even at bulk discount rates. If the act required developers also to plant trees in proportion to the area of associated roads, sidewalks, and improved public areas, the cost per house of tree planting would roughly double.

A super regional shopping center (such as the Sunrise Mall in Citrus Heights) and its parking lot, for example, occupy about 100 acres, which equals 4.3 million square feet. Under the act, the developer of such a shopping center would have to plant 8,700 trees, at a cost of roughly $560,000, not including any irrigation costs. The cost likely would be greater than this if the developer had to purchase additional land to plant trees that could not fit on the shopping center land. To the extent public land was available for this purpose, the cost to acquire additional land for trees would be eliminated.

Effect on Global Climate Change Not Measurable. Many scientists believe that tree planting is one of the most cost-effective forms of CO_2 reduction and energy conservation. The overall effect on global climate of planting one tree for every 500 square feet of new development, however, cannot be measured. We also do not have any basis for estimating the ecological, energy saving, and aesthetic values of the tree planting provision, although they could be substantial.

Trees Will Enhance Local Environment. Trees planted as a result of Section 16 of this act will enhance local landscapes.

STATE AND LOCAL FISCAL EFFECT

The Resources Agency would incur probably minor absorbable costs to develop regulations to implement Section 16 of this act.

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SUMMARY OF KEY PROVISIONS

ANCIENT REDWOOD FOREST PRESERVATION AND URBAN FORESTRY BOND PROGRAM

$300 Million Bond Fund. Section 17 of the act authorizes the state treasurer to sell $300 million in general obligation bonds. Proceeds from selling the bonds would be deposited in the Ancient Redwood Forest and Reforestation Fund created by the initiative. The act continually appropriates money in this fund to the Wildlife Conservation Board (WCB) for:

- Acquiring stands of ancient redwood ($200 million),
- Granting funds for urban forestry projects ($100 million),
- Administering the bond program (from among redwood preservation and urban forestry funds).

The secretary of the Resources Agency may designate another department within the agency to administer the program.

Acquiring Ancient Redwood Stands. The act requires the WCB, by August 15, 1991, to list in priority those stands of ancient redwood trees that the state should acquire, based on specified criteria. The top criterion would be stands that have never been logged. By November 7, 1991, the board would begin acquiring stands with an aggregate market value of $200 million. The board may acquire the stands by various means, including by sale, gift, lease, and eminent domain. Ancient redwood stands may not be logged after being acquired by the state under the act.

Prohibiting Clear-cutting of Ancient Redwood Forests. The act also prohibits the logging between November 7, 1990, and November 7, 1991, of any stand or part of a stand of ancient redwoods that is at least 10 acres. The act requires anyone logging ancient redwood stands after November 7, 1991, to use the selective logging method, in which the logger leaves a continuous forest cover and trees of all sizes and ages.

Planting Urban Forests. The act appropriates $100 million of bond funds to the WCB for support of the California Urban Forestry Act of 1978 (beginning with Public Resources Code Section 4799.06). The purpose of that law administered by the California Department of Forestry and Fire Protection (CDFFP), is to reduce the loss of urban forest resources and to facilitate the planting and maintenance of trees in urban areas.

The 1978 law authorizes the department to provide grants to local governments and nonprofit organizations for up to 90 percent of tree planting and maintenance costs. The department currently receives $842,000 per year for technical assistance ($154,000 from the Forest Resources Improvement

Fund) and grants ($668,000 from the California Wildlife, Coastal, and Park Land Conservation Fund of 1988 — Proposition 70) to local governments for urban forestry programs.

Presumably, the WCB would either consult with or subcontract with the department to administer the $100 million authorized by the Environmental Protection Act of 1990 for the urban forestry program.

BACKGROUND

Sixty-one Percent of Old-Growth Redwood Privately Owned. According to the Department of Forestry, there are approximately 33 million acres of forest lands in California. Of this amount 1.6 million acres are redwood trees, of which about 230,000 acres are in old-growth redwood stands. The department defines "old-growth" redwood to be any redwood tree older than 175 years. The Save-the-Redwoods League estimates that about 78,000 acres of virgin redwoods are in parks and reserves in California. The department estimates that another 11,400 acres of partially harvested old growth are on reserved public lands. The department estimates that 140,600 acres of old-growth redwoods are on private and unreserved public lands, most of it probably private. The amount of old-growth redwood has declined from about 950,000 acres in 1920 to the 230,000 acres today.

Trees Absorb CO_2. Humans are destroying about 40,000 square miles of forest per year, particularly in the tropics. This is equivalent to denuding tropical forests covering an area the size of Louisiana—each year. Destruction of forests worldwide accounts for about 30 percent of CO_2 increases during the 1980s.[1] This increase in CO_2 production results from (1) increased burning and decay of vegetation, and (2) reduced capacity for photosynthesis, in which vegetation converts CO_2 to oxygen.

Trees Reduce Local Temperatures and Reduce Energy Use. Trees and other vegetation also cool buildings and populated areas, increasing the level of comfort and reducing demand for electricity used to run air conditioners. Saving electricity, in turn, reduces the amount of fossil fuel burned to produce electricity and the amount of chlorofluorocarbons (CFCs) used in air conditioners. Trees mitigate against global warming, then, by absorbing CO_2, cooling the local environment, and reducing emissions of CO_2 and CFCs that result from air conditioner use. Trees also provide many ecological and aesthetic benefits.

Forests Being Destroyed Worldwide. Brazil leads the world today in forest destruction. It destroyed about 1 percent of its forests in 1988 alone. The U.S. Forest Service estimates that the amount of forest land in the U.S. has decreased roughly 30 percent since the 17th Century. The Forest Service estimates that forest lands and timberlands (commercial forest lands) have decreased by about 8 percent and 2 percent, respectively, since 1953.

BALLOT ANALYSIS:

Proposition 128: Environmental Protection Act of 1990.

ANALYSIS OF POLICY IMPACT

Benefits of Ancient Redwood Preservation. Some redwood trees in California are 2,000 years old. They are among the oldest living things on Earth and are ecologically rich and complex. Preserving ancient redwood stands, therefore, will increase the ecological, recreational, and aesthetic values of forest lands in the state. According to proponents of the act, the $200 million in bond proceeds could preserve over 8,000 acres of ancient redwood forest. Based on Department of Forestry data, 8,000 acres of ancient redwoods represents approximately 3.5 percent of all old-growth redwood stands in the state.

Clear-cutting vs. Selective Cutting. Cutting all or nearly all trees in a stand of trees can be the most cost-effective way for companies to harvest timber. Experts disagree, however, on how clear-cutting effects the local and downstream environments.

Clear-cutting, however, can result in greater ecological and aesthetic damage to the local environment, despite efforts by timber owners to minimize and repair damages. Clear-cutting of timber can, for example:

- Erode soil,
- Damage watersheds,
- Displace or damage wildlife populations, and
- Destroy aesthetic values of forests.

Cost of Bond Measure to State. If the treasurer sells $300 million in general obligation bonds as authorized by this act, the General Fund would incur costs totaling $37.5 million for principal ($15 million) and interest ($22.5 million) in the following year. The costs of repaying the principal would remain at $15 million per year over the life of the bonds. Interest costs would decline by $1.1 million each year over the life of the bonds. This assumes that the treasurer sells the bonds with interest rates of 7.5 percent per year for terms of 20 years.

Cost of Timber-Cutting Restrictions to Timber Owners. The act would prohibit owners of ancient redwood timber from harvesting any ancient redwood timber between November 7, 1990, and November 7, 1991, the first year the act would be in effect. The timber and associated industries could incur unknown, but potentially major, financial losses during that year. The act also prohibits clear-cutting of ancient redwood stands. The timber and associated industries could incur unknown financial losses from this prohibition as well.

Benefits of Urban Forestry. Proponents of the act assert that the $100 million in bond proceeds for urban forestry would cover the costs of planting 176,000 acres of new trees, which within a generation could absorb enough CO_2 to offset the CO_2 emissions of 800,000 automobiles. Increasing the number of trees in urban areas also would cool local environments, reduce energy demanded for air conditioning, and increase ecological and aesthetic values.

ENDNOTES

1. Trees inhale carbon dioxide in the atmosphere, using the carbon to grow. They exhale oxygen. Increases in carbon dioxide in the atmosphere account for about one-half of the increasing greenhouse effect. Decaying vegetation, including trees, also give off methane, another important greenhouse gas.

PURCHASE OF RECYCLED PAPER PRODUCTS

SUMMARY OF KEY PROVISIONS

These sections establish goals for the purchase of recycled paper products by the Department of General Services and other state and local agencies.

"Local agencies" includes every city, county, school and community college district.

BACKGROUND

Last year the Legislature passed and the governor signed a package of bills that established a comprehensive program to redirect the management of the nearly 39 million tons of solid waste generated each year by the residents of California. The central focus of this program is a statewide integrated waste management system to govern all solid waste policies of the state. This system placed primary emphasis on source reduction and recycling as the preferred solid waste management options.

Two of the key bills in this package, AB 4, Chapter 1094, Statutes of 1989, and SB 1322, Chapter 1096, Statutes of 1989, established programs for the purchase of various recycled products by state agencies and the Legislature.

ANALYSIS OF POLICY IMPACT

Existing law requires the Department of General Services and other procuring agencies to give a preference, where feasible, to the purchase of paper products containing recycled paper. The department is required to give suppliers of recycled paper products a preference by reducing their bid proposals by 5 percent of the lowest bid or price quoted by suppliers of

nonrecycled paper products. The amount of preference cannot exceed $100,000 for any one bid. If granting a recycled paper preference exceeding $50,000 would preclude a small business from receiving the award, however, the recycled paper preference is limited to $50,000.

The act would:

1. Increase the purchasing preference to suppliers of recycled paper products to 10 percent.

2. Repeal existing law limiting the amount of preference per contract.

3. Amend existing law from requiring the quality of recycled paper products to be "equal" to nonrecycled paper products to requiring them to be "functionally adequate."

4. Amend existing law to require that local agencies give a preference to suppliers of recycled paper amounting to at least 10 percent of the lowest bid.

5. Authorize reimbursement to local agencies from the Integrated Waste Management Account if they can demonstrate their services will be reduced because of the costs imposed by these sections.

A strong recycling policy, such as that passed by the Legislature and signed into law last year, has the potential to divert large volumes of paper and other recyclable products otherwise destined for California's dwindling supply of landfills. Since paper products comprise over one-third of municipal garbage, the increased recycling effort will most likely create an abundant supply of recycled paper products. Without a concomitant demand for the products, they will most likely accumulate until such demand is increased. Moreover, if storing them becomes a problem, they will probably end up being dumped in landfills.

Typically, the balance between available supply and demand for a commodity determines its economic value. A viable economic market for recycled products is critical to the success of recycling. Expanding the market for recyclable paper by requiring an increase in state procurement is a way of increasing the demand for such products. Government procurement of recycled products is significant since these agencies currently represent 16 percent of economic activity. In addition, government activity may also assist in raising the economic value of recycled materials.

FISCAL IMPACT

These recycling requirements probably would result in significant annual costs to all state and local agencies, depending on the extent to which they purchase recycled paper products that cost more than nonrecycled products.

These costs, however, would be partially offset by the savings from the avoidance of waste disposal and the revenues from selling recyclable paper. For example, data from the Department of General Services' recycled paper program report a direct savings on waste disposal of over $850,000 for a 10-year period ending in 1987. Current figures would be significantly higher since disposal costs have almost doubled. Similarly, a savings of over $327,000 was realized, during the same period, from the purchase of recycled paper with revenue from selling recycled paper. These savings are likely to increase as the costs of selling recycled paper increases due to a higher demand for recycled products.

COASTAL PROTECTION, INCLUDING OIL SPILL RESPONSE

SUMMARY OF KEY PROVISIONS

This portion of the initiative would create a state sanctuary consisting of all state bay, estuarine and ocean waters and establish a program to protect the sanctuary. A key element is a comprehensive program for preventing and responding to oil spills. The major provisions would:

- Prohibit leasing of offshore areas for the extraction of oil and/or natural gas.
- Create a State Oil Spill Coordinating Committee charged with coordinating compliance with the initiative's oil spill prevention and cleanup sections.
- Prohibit the discharge of pollutants into the sanctuary waters unless the discharged water received at least secondary treatment.
- Grant cease and desist power to the State Lands Commission and Coastal Commission for protecting the sanctuary.
- Require a comprehensive state program for oil spill prevention and response.
- Establish a $500 million state fund for cleaning up and responding to oil spills.
- Create a state policy favoring transporting crude oil by pipeline rather than tanker.

BALLOT ANALYSIS:

Proposition 128: Environmental Protection Act of 1990.

ANALYSIS OF POLICY IMPACT

The prohibition on oil and gas leasing can be lifted if the governor finds the energy is necessary to meet a national emergency and the nation's Strategic Petroleum Reserve (SPR) is being used. Since the SPR contains only 90 days' supply of oil, and offshore oil development takes many years, it is not clear why the two are linked. The SPR is for a short-term energy crisis while offshore oil could only be of use in a long-term energy crisis. This linkage could lead to a situation where offshore oil development is authorized during a crisis, but not enter production until much later when prices stabilized and there was not as great a need for the oil.

The deadline for prohibiting the discharge of wastes that have not received secondary treatment is already in law. However, under existing law, waivers can be granted to allow continued discharge of inadequately treated sewage. The initiative would set a deadline after which waivers could not be granted. This deadline would probably advance the date after which discharges had to receive secondary treatment and would also accelerate, but not necessarily increase, the costs of meeting the standard.

The language authorizing the State Lands Commission and the Coastal Commission to exercise cease and desist authority is not clear. Typically, cease and desist authority is used to stop activities that are inconsistent with laws, regulations or a granted permit. For example, Section 66637 of the Government Code, which is part of the statutes that are used as a procedural model in the initiative, authorizes the Bay Conservation and Development Commission to issue a cease and desist order when:

> "...any person is undertaking an activity that (1) may require a permit from the commission without securing a permit; or (2) may be inconsistent with any permit previously issued by the commission."

The initiative states in Section 37011 that cease and desist authority is granted:

> "... with respect to any permit, lease, license or other approval or authorization for any activity requiring a permit, lease, license or other approval or authorization..."

The language does not appear to extend cease and desist authority to the types of actions covered by Section 66637 of the Government Code and would appear to limit their issuance to occasions when the commissions are already in a position to take a discretionary action on a project. The language in the initiative would appear to greatly limit the use of cease and desist authority.

Oil Spill Coordinating Committee's Role Unclear

The initiative establishes a State Oil Spill Coordinating Committee to coordinate compliance with this chapter. The exact duties of the committee are not specified. Is it advisory? Must the committee approve regulations? There already exists a State Interagency Oil Spill Committee (SIOSC). SIOSC has just completed a report evaluating the capabilities for responding to large spills. The initiative does not address the relationship between the two committees.

The initiative prohibits the granting of new leases or renewal of existing leases for any facility that could be the source of an oil spill unless a State Oil Spill Prevention Plan is adopted and implemented. Focusing of resources on prevention is desirable because oil spill cleanup is not particularly effective. The effectiveness of response depends to a great extent on weather conditions and the sea state.

The prohibition on leasing applies unless all implementation named in the plan is carried out. Since federal and local governments could be named as implementing agencies, their unwillingness to implement the state plan could tie the hands of the state and prevent the state from renewing leases for marine terminals, pipelines and offshore oil platforms. Since California imports more than one-half of the oil consumed in the state, shutting down marine terminals and pipelines could cause grave economic damage.

Inter-Agency Coordination Envisioned

The initiative would have the Coastal Commission adopting regulations for contingency plans, in consultation with the State Lands Commission and the Department of Fish and Game. Most facilities are in the jurisdiction of both the Coastal Commission and the State Lands Commission. Hence, jointly produced regulations may eliminate red tape in applying for permits.

It is not clear how well three agencies can work together to produce and approve regulations. This is not a common method for promulgating regulations.

Other agencies require contingency plans for facilities they regulate. These agencies would still have their independent authority to require contingency plans that meet their own criteria.

The requirements of the Coastal Commission and the San Francisco Bay Conservation and Development Commission for contingency planning would have to meet two standards, the "best available containment and cleanup technology" and the "maximum possible protection of the sanctuary." Both of these standards are very strict and could be used to justify

protective measures that cost proportionately much more than the benefits. Current and proposed law requires some consideration of feasibility and cost-effectiveness.

Oil spill response efforts are established in the Department of Fish and Game in another section of the initiative. Developing the requirements for contingency planning is vested with the Coastal Commission, but the Department of Fish and Game is the lead for responding to an oil spill and ensuring the contingency plan is implemented. Dividing responsibilities for prevention and response functions may not be desirable.

The administrator of the Department of Fish and Game's oil spill response unit is provided considerable authority to direct response efforts. Centralized authority is considered important in responding to a spill.

Paying for Oil Spill Responses

The State Lands Commission is charged with collecting money for the Oil Spill Prevention and Response Fund. The Board of Equalization would seem to be a more logical choice for collecting the money.

The fee is levied on all oil that crosses state waters. The fee is adjusted according to the oil spill risk of the method of transportation. Presumably, all tanker operators would be paying the same fee, regardless of the financial resources of the company. Since the fund is really an insurance fund to be used when an operator cannot assume financial responsibility, the fee should be levied on the basis of which operator poses the greatest financial risk to the state. The fee mechanism in the initiative acts as a penalty against larger financially sound companies that have the ability to pay for cleaning up their own spills.

The initiative calls for a $500 million fund for oil spill response. This fund would be used if there was not a responsible party to pay for cleanup and restoration. It is unlikely a majority of this fund will ever be used. Pending legislation calls for a smaller fund with a larger standby borrowing authority in the event that more resources are needed.

BACKGROUND

Oil Spills. Oil spills are common throughout the world, but many spills are small and escape public scrutiny. The Exxon Valdez disaster jolted the public and focused attention on the issues of oil spills. The oil spilled in near-virgin Alaskan waters created tremendous environmental damage. Cleanup and restoration costs have topped $2 billion and are still rising.

The Exxon Valdez spilled approximately 10.8 million gallons of oil. While large, the Alaskan spill is dwarfed by some other spills. For example, in 1978

the Amoco Cadiz ran aground off the coast of France and spilled 68.4 million gallons of oil.

California is well-known for its many miles of scenic coast, much of which includes valuable fish and wildlife habitat. Given these resources, an oil spill in the state could obviously have detrimental effects.

The dangers presented by marine transportation of crude oil were brought home to Californians when the American Trader spilled oil in the Pacific Ocean off of Southern California early this year. The American Trader accident was a much smaller spill, about 300,000 gallons, with less environmental damage than that resulting from the Exxon Valdez discharge.

The luck the state has had in avoiding major spills may not last. California plays a pivotal role in production, refining and transportation of crude oil and petroleum products. Over 2,000 tankers call at California ports annually. Others pass through offshore waters near the state enroute to other destinations. Offshore oil platforms produce large quantities of crude oil. These elements of the petroleum infrastructure mean that, as a state, California must prepare for the possibility of a major spill.

Response to Oil Spills. The Exxon Valdez spill focused attention on oil spills. The response of industry and government was found to be severely lacking. Federal legislation is being enacted in an attempt to improve federal response. Many states have followed suit.

California is in need of beefing up its own oil spill prevention and response programs. The state programs are weak for a variety of reasons:

- The state has relied on the representations of industry. Such representations were found to be inaccurate in Alaska.
- The existing industry programs are voluntary, not mandatory.
- More attention should be paid to prevention.
- The state has no effective method to regulate tankers.
- The state does not have adequate funding that is immediately available for cleanup of large oil spills.
- There is no requirement that a party that transports oil has adequate financial resources to pay for the cleanup of larger spills.
- Many regions of the state do not have contingency plans for dealing with a spill.

Proposition 128: Environmental Protection Act of 1990.

In the event of an oil spill, the Department of Fish and Game is the agency that is in charge of ensuring a response. The department attempts to have the responsible party pay for the cleanup. If the responsible party is not known or unwilling to help, the department has a fund that can be used for oil spill response. The balance in the fund is relatively small, however.

Oil and Gas Leasing. The state, through the State Lands Commission, leases offshore lands for a variety of purposes including the exploration and development of oil production facilities. In 1988/89 lease payments and royalties to the state exceeded $200 million. The State Lands Commission has an extensive regulatory program designed to prevent spills at offshore drilling platforms, marine terminals, processing facilities, and pipelines within its jurisdiction.

The state has not entered into a new lease for oil and natural gas rights for over 20 years. Many older leases have not been developed yet or even explored. The only recent attempt to push a development plan was an effort by ARCO to build two platforms off the coast of Santa Barbara. The ARCO project was denied by the State Lands Commission.

The majority of the state's waters are already in an oil and gas sanctuary. The exceptions are a portion of the waters that are offshore of Los Angeles, Ventura, Santa Barbara, Humboldt and Del Norte counties. For much of the north coast, however, the sanctuary is due to expire in 1995.

In contrast, the federal government has been actively leasing federal tracts for exploration and development. The initiative would have no effect on these efforts.

Discharge of Waters. Existing federal law requires secondary treatment of water that is discharged from a publicly owned sewage treatment plant. However, many dischargers do not meet this requirement. Waivers are granted by the state and federal governments to allow continued discharge of water that has not been treated to secondary standards. These waivers are being phased out.

FISCAL IMPACT

The U.S. Environmental Protection Agency estimates that it would cost $2.5 billion to ensure secondary treatment of all discharges. Under existing law secondary treatment is required, hence the fiscal impact of the initiative would be limited to an acceleration of the spending.

By preventing the leasing for offshore oil, the state could be deprived of substantial funds. The Office of the Legislative Analyst estimates the state could lose up to $2 billion in future oil and gas revenues. This estimate assumes the state is willing to go ahead with ambitious offshore develop-

ment programs. Given the widespread opposition to offshore oil development it is doubtful the initiative would have that significant an impact.

The initiative creates a $500 million fund for oil spill response. A fee of up to 25 cents would be levied on every 42-gallon barrel of oil that crosses marine waters. To provide a $500 million fund in six years, a fee of approximately 20 cents would have to be levied. Such a fee will raise the price of all petroleum products, including gasoline. The increase is likely to be minor, about a half cent per gallon.

1989-90 Legislation

SB 2040 (Keene) - Oil Spills
Would establish a comprehensive state program for the prevention and cleanup of oil spills. An important provision is the establishment of a state fund for cleanup and restoration.

The bill would require that all facilities have contingency plans for responding to spills; tanker safety be enhanced through improved harbor safety, expanded use of navigation aids, and double hulls; and financial responsibility for all vessels and facilities be established. SB 2040 was sent to the governor at the end of the 1989-90 session.

MARINE WATER QUALITY PROTECTION

SUMMARY OF KEY PROVISIONS

This act would take a number of steps aimed at monitoring and improving the quality of state waters. It would:

- Require the state Water Resources Control Board (state board) to adopt sediment quality objectives as water quality standards from marine, bay, estuarine and coastal waters.

- Require the state board and the regional water quality control boards (regional boards) to establish the maximum amount of toxic pollutants that can be discharged into oceans, bay or estuary waters without harming the marine environment or human health. Discharge permits would be allocated on that basis.

- Require each coastal county to develop a stormwater management and control plan.

- Require industries to conduct periodic pollution prevention audits to identify ways to reduce the discharge of toxic chemicals into state waters.

Proposition 128: Environmental Protection Act of 1990.

- Revise marine pollution discharge fees to require those that discharge greater quantities and more toxic chemicals into the state's marine waters to pay higher fees than those who discharge less toxic substances.

- Require the Department of Health Services to identify threats to the public health from contaminated fish and waters that are used for swimming. The department would be required to set standards for poisonous or deleterious substance and post warnings to protect the public health from contaminated fish and ocean waters.

BACKGROUND

Ocean, bays, and estuarine water quality is affected by many factors. Over 4 billion pounds of toxic chemicals are discharged into state waters each year. Cities discharge an additional 2.18 billion gallons of municipal and industrial sewage into these waters daily. It is evident by statewide incidents of contaminated fish, swimming beach closures, and fish kills, that these discharges are having a major adverse effect on the state's coastal waters.

The Federal Clean Water Act, as amended by the Water Quality Act of 1987, is the cornerstone of national and state efforts to improve the quality of our water resources. The Porter-Cologne Water Quality Control Act is California's major water quality law. These laws are carried out by the state Water Resources Control Board and the nine Regional Water Quality Control Boards. California was the first state in the nation to assume responsibility for administering major portions of the Clean Water Act.

The sources of toxic chemicals, and of all surface-water pollutants, are usually categorized either as "point" sources, such as manufacturing industries and municipal wastewater treatment plants that discharge directly into surface waters, or "nonpoint" sources, such as runoff from agricultural fields, stormwater, timbered lands and deposition of atmospheric pollutants.

ANALYSIS OF POLICY IMPACT

Sediment Quality Objectives

Existing law requires the state water board, by July 1, 1991, to submit to the Legislature a plan for determining acceptable levels of sediment pollution in known or suspected toxic hot spots. The state board is required to base these thresholds on health risk assessments. The goals for acceptable sediment toxics must be established with an adequate margin of safety, for the reasonable protection of the beneficial uses of water.

The initiative would, by January 1, 1993, require that such sediment quality objectives be adopted as water quality standards for the state's marine, bay,

estuarine and coastal waters. The act also would require that such standards shall ensure the full protection of public health and recreational values, and the full protection and propagation of fish, shellfish and their habitat (Section 13397.5).

The state Water Resources Control Board asserts the development of sediment quality objectives requires a significant research effort. The short time-frames established by the act would require expanded effort by the board. It estimates annual ongoing costs of $280,000 and an additional $2 million in contracts to implement this section.

Existing law requires sediment analysis for bay and estuarine waters. The act expands this to include coastal waters (Section 13397.6(a)). The board estimates that adding coastal waters will increase workload by one-third. It estimates average ongoing costs of $840,000 (9 staff positions) and an additional $1.5 million for contracts.

Regional Plans vs. Specific Plans

Existing law requires each regional board to adopt water quality control plans for all areas within the region and establish water quality objectives to ensure the reasonable protection of beneficial uses and the prevention of nuisances. The act requires each regional board to adopt specific plans for full protection of public health and recreational value, and for the full protection of fish, shellfish and their habitat in the state's marine bay, estuarine and ocean waters (Section 13397.6(b)).

The state water board states the level of detail and complexity would be much greater than now required. The state board and regional boards currently devote about 23 staff positions to the maintenance of 12 regional plans. The state board estimates that development of each site-specified plan would require at least 16 new positions (total over 5 years) statewide and additional, contract funds to complete laboratory and field data collection. No cost estimates were given.

Pollutant Loadings

One of the key elements of the Clean Water Act, as amended by the Water Quality Act of 1987, was the requirement to identify, by February 1989, waterways impaired by toxic pollutants. The state must develop a strategy to reduce toxics for identified point sources so that water quality standards are met within three years.

Basically, the state must determine the maximum pollutant load for each identified stream segment and use the data to develop specific permit limitations for individual dischargers. To date, the state water board has not accomplished these requirements.

The act requires that by June 1, 1992, the state and regional water boards meet the Clean Water Act requirements for establishing total maximum daily loads and waste land allocations, and implement them by June 1, 1994. If water quality objectives are not met, the regional boards would be prohibited from issuing or amending permits allowing an increase in discharges.

The state board reports that only the south San Francisco Bay and possibly one or two other locations would be covered by this section. The state board estimates a one-time cost of 10.5 staff positions (over 2-4 years) and $2.55 million for contracts, and an average annual ongoing cost of 16 staff positions to implement this section.

Stormwater Runoff

Another source of water pollution is the runoff from streets, parking lots, and the roofs of houses and buildings, which goes directly to storm drains and then to the nearest outfall. The substances washed from the streets include residues from petroleum products, asbestos worn from brake linings, lead and other products of gasoline combustion.

Existing law does not require that stormwater runoff be minimized.

The act would require that each coastal county develop by January 1, 1994, a comprehensive stormwater management control plan designed to minimize runoff to bay, estuarine and ocean waters.

This section would affect six regional boards and the state board. The following counties would have to prepare such plans: Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego.

The state board estimates an average ongoing cost of 5.5 staff positions. The costs to the affected counties to develop, adopt, implement and enforce their county plans would be significant. The act does not provide state funds for the mandated local government activities but affected counties would likely claim such costs under Article XIII B of the California Constitution.

Pollution Prevention

Existing law does not require that dischargers to Publicly Owned Treatment Works (POTWS), or those that are permitted to discharge directly to surface waters, implement measures for the prevention of pollution. Existing law controls discharges of water pollutants mainly through the issuance of water quality standards and pretreatment programs.

The act will require that particular dischargers submit pollution prevention audits that review their sources of water pollution and implement measures to prevent pollution. The act defines "pollution prevention measures" as product reformulation, operations improvements, equipment improvements, and recycling. The audits would be submitted to the appropriate regional boards.

The state board estimates that a total of 10,300 facilities would come under the requirements of this Section (2,300 direct industrial dischargers, and 8,000 dischargers to POTWS). It estimated average annual ongoing costs of 22 staff positions.

The Legislature is considering SB 1816 (Roberti) to require water polluters to perform audits and indicate measures they will take to reduce the water pollutants.

Contaminated Fish and Ocean Waters

Even though the Department of Health Services has broad statutory responsibility to protect public health, there exists no statewide program for identifying and assessing human health risks from contaminated marine life and ocean waters. The act would require the Department of Health Services to set up health-based standards for "poisonous or deleterious substances." It would require the department, by January 1, 1992, to adopt statewide water quality standards for swimmers and beach users and mandates the posting of public health warnings if the body of water is found to exceed such standards.

FISCAL EFFECT

Cost: The state board estimates a one-time cost, over five years, to implement Section 26 of $5.28 million, and average annual ongoing costs of $7.5 million. These amounts exclude local assistance and local government costs, which may be substantial.

The cost to develop health standards for contaminated fish and safe water quality for swimmers of marine waters is unknown, but is probably substantial.

Revenues: The act would authorize the state board to set a schedule of fees to fund Section 26 and other sections of the act. However, these fees are limited by the act to $2 million. This limitation only defrays about one-fifth of the estimated costs to implement the provisions of this section.

BALLOT ANALYSIS:

Proposition 128: Environmental Protection Act of 1990.

SUPPORT/OPPOSITION ARGUMENTS

Supporters of the initiative argue this section is needed for the following reasons:

Limitations of Current Law. The state does not have regional water quality or sediment standards. It regulates water quality at the end of each pipe that has a permit to discharge into coastal waters. No attention is paid to the cumulative impact of these discharges or the unregulated flow of toxics from storm drains or agricultural runoff.

Current state law does not provide for a coordinated or comprehensive monitoring of the effects of regulated and unregulated discharges.

Failed Legislative Efforts. The Legislature has attempted to address water quality and health issues over the last several legislative sessions but most of these bills have either died in committee or have been vetoed by Governor Deukmejian. For example:

AB 1990 (Hayden), would have created an ocean monitoring program; vetoed by the governor, 1988.

AB 3666 (Bates, Campbell, and Hayden), would have established a San Francisco Bay water quality program; died on the Assembly floor, 1988.

AB 496 (Hayden, et al.), would have promoted toxics source reduction; died in Senate Appropriations Committee, 1987.

SB 2691 (Hart), would have created a bay and estuary water quality program; vetoed by the governor, 1988.

SB 1846 (Rosenthal), would have required a Santa Monica Bay Water Quality Monitoring study; died in the Assembly Water, Parks, and Wildlife Committee, 1988.

ENVIRONMENTAL ADVOCATE AND ENFORCEMENT

SUMMARY OF KEY PROVISIONS

Generally the act would establish the Office of the Environmental Advocate to promote the proper implementation of this act and create a seven-member California Council on Environmental Quality (council).

Specifically, the act would:

- Establish the Office of the Environmental Advocate and an environmental advocate to be elected in the 1992 general election.

- Require the advocate to implement this act and to fully enforce all state laws relating to environmental protection and public health.
- Require the council to issue periodic reports on the state of the environment and to evaluate the state's progress in the implementation of this act.
- Require the council to issue grants for applied research on alternatives to pesticides in agriculture, for compliance with Titles 4 and 5 of this act, and for methods of source reduction of toxic chemicals in the state.
- Provide legal mechanisms by which public officials and individuals may seek to enforce the provisions of the act.

BACKGROUND

Current law requires the chairperson of the state Air Resources Board (ARB) to assist the governor in establishing the major policies and programs relating to environmental protection. The chairperson of the ARB, in addition to serving as the governor's chief air quality policy spokesperson, acts as policy and program communication link for the transmission of policy problems and decisions to the governor relating to the activities of the State Water Resources Control Board (SWRCB) and the California Integrated Waste Management and Recycling Board (CIWMRB).

Since about 1978, the chairperson of the ARB has acquired the working title of secretary of environmental affairs and serves as a member of the governor's cabinet. An Environmental Affairs Office given broad authority and responsibility to enforce environmental protection laws or for assessing the state of the environment is not, however, established in current law.

ANALYSIS

Programs to provide environmental protection to air, water, and soil are scattered throughout state government. These programs are supervised by several different super agencies. Consequently, there is no single cabinet officer who has the authority to coordinate the activities of these programs and the policies of the agencies that administer them. Moreover, no agency has the responsibility to assess the adequacy and effectiveness of the state agencies that have major programs for environmental protection.

The act creates the Office of the Environmental Advocate to provide a clear command and control focus, not only for the implementation of this act, but for all environmental protection and public health programs.

BALLOT ANALYSIS:

Proposition 128: Environmental Protection Act of 1990.

LEGISLATIVE HISTORY

The Legislature and the Administration have proposed numerous reorganization plans to restructure the administration of some of the environmental agencies. In the 1985-86 legislative session, Governor Deukmejian submitted an Administrative Reorganization Plan that was rejected by the Legislature. The same year, the governor vetoed SB 1048, which would have created a single Environmental Affairs Agency. This year, SB 2773 was introduced to establish an Environmental Protection Agency to reorganize the state governmental structure for administering various environmental protection functions and regulatory programs in the executive branch.

FISCAL EFFECT

The act makes a one-time General Fund appropriation of $750,000 to the Office of the Environmental Advocate for administrative costs during fiscal year 1992-93 and $40 million for environmental research grants in 1990. The administrative costs of the office in future years are unknown.

Prepared by Buzz Breedlove, Roger Dunstan, Bruce Jennings and Martha Valdes